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celibacy, but urge, that, when marriage is looked forward to by the deaf, the union of two deaf persons is much surer of being attended with happiness than when one of the party is deaf and the other hearing, and that the slight and doubtful increase of a possible deaf offspring is more than outweighed by the social and personal comfort. Others draw a distinction between the intermarriages of the congenitally deaf and those who become so in mature years, urging that the probability of deaf descendants is far greater in the former case than in the latter. Many, too, regard consanguinity as a more potent factor in the production of deafness than deafness itself. Quite otherwise is the verdict given by such scientific men as Cope, Hyatt, Brewer, Newcomb, Brooks, and Bowditch. These men are unanimous in the opinion that deafness is essentially hereditary, and that the influences now in operation are similar in character to those that a breeder would furnish to bring about a variety with certain characteristics, and that these must tend towards perpetuating deafness as a constant characteristic of a certain portion of the human species. As a possible source of light in the matter, the suggestion may be offered that the heredity of deafness may vary greatly with the disease that led to it. So many cases of deafness are due to the after-effects of serious diseases, that here is a possible mode of reconciling the opposite experiences of different observers.

(4) and (5). Under these heads are given the various usages and modes of instruction in the schools of the country, with a more or less technical discussion of them.

In general, Professor Bell has succeeded in putting together much valuable matter relating to the deaf-mute class, and the presentation of this pamphlet to the royal commissioners must increase their estimation of the work of America in this field of applied science and applied philanthropy.

#### NOTES AND NEWS.

AMONG the publications of J. B. Lippincott Company announced as in press, we note 'An Elementary Treatise on Human Anatomy,' by Joseph Leidy; 'A Cyclopædia of Diseases of Children, and their Treatment, Medical and Surgical,' edited by J. M. Keating, M.D.; 'Life of Henry M. Stanley,' by Rev. H. W. Little; and 'Botany,' for academies and colleges, by Annie Chambers-Ketchum. — Ginn & Co. have in press 'Voices of Children,' a theoretical and practical guide on the topic, by W. H. Leib of the National Normal Music-School. — The October number of *Lippincott's Magazine* is a special E. P. Roe number, the first half of which is taken up with articles in one way or another commemorative of the dead novelist. — The Hon. Hugh McCulloch will discuss in *Scribner's Magazine* for October, free ships, revenue reform, immigration, and land-monopoly; and Prof. Arthur T. Hadley of Yale will contribute an article on 'The Railroad in its Business Relations.' — Ginn & Co. are to be the American publishers of the *Classical Review*, which is published in London, and numbers among its contributors the most eminent classical scholars of Great Britain. American scholars will be associated in the editorship.

— In a recent valuable and timely monographic paper upon the mesozoic mammals, Professor Osborn of Princeton has shown that the previously entertained views of the paucity of primitive mammalian life is not so great as has been supposed. No less than thirty-five genera are now known, including five from the trias, and one from what in all probability is correctly considered the most recent cretaceous. That all the vast gap of the cretaceous proper, so rich in vertebrate life, has not yet presented a single mammalian form, is marvellous. Scarcely less remarkable is the fact that among the known forms there is great diversity, the teeth showing six or seven wholly distinct types, "and this at a zoological period which we have been accustomed to consider as the dawn of mammalian life." Further, all these types, though primitive, are essentially mammalian, a single genus only showing any reptilian affinity. Very interesting, too, are the geographical and geological relationships of the genera. Among the thirteen or more North American Jurassic genera, six have their counterparts in English rocks, and the family relationships of all the rest are very close. One family, the *Plagiaulacidae*, has its members distributed in the

trias and Jurassic of both Europe and North America, the uppermost cretaceous of America, the lowest tertiary of France and America, and probably the post-tertiary of Australia, — truly a remarkable distribution, both geologically and geographically.

— In his 'Synopsis of the Families and Genera of the North American Diptera,' Dr. Williston has rendered a great service to the students of this neglected branch of entomology by bringing together in small compass so convenient and useful a series of tables. Some of these have been given before in different writings of the author, and he has compiled a part from the works of others; but in no place will the American student find so much comprised in so compact form. By means of it any student with tact can determine with considerable certainty to what genus any of his flies belong; excepting, indeed, in the case of some of the more difficult families which Dr. Williston has not attempted to include, such as the *Nematocera* and *Muscidae*, the latter the terror of systematists. Dr. Williston has added a bibliography supplementary to that given by Osten Sacken in his useful 'Catalogue of Diptera,' bringing the needed information regarding the literature of dipterology down to date. It should prove a stimulus to the study of the *Diptera*.

#### LETTERS TO THE EDITOR.

##### Recent Changes in the Magnetic Declination in Lower California.

REFERRING to an interesting note in *Science* for June 27, in which is given a brief account of magnetic observations lately made on the coast of Lower California and vicinity by officers of the United States steamship 'Ranger,' I beg leave to add some remarks further illustrating the change or reversal in the direction of the secular motion as noticed by the observers on the late cruise of the 'Ranger,' at Rosalia Bay. While the fact is here established by direct observations, the phenomenon had already been recognized in a discussion made in the United States Coast and Geodetic Survey Office in January last, and the results were published by permission of the superintendent of the survey, at San Francisco, Cal., in the *Mining and Scientific Press* of Feb. 18, in an article on the 'Magnetic Variation on the Pacific Coast.' Not only the fact of the reversal, but the years of the reversal of the direction of the secular motion, that is, the years when the easterly declination (or so-called 'variation') ceased to increase and commenced to decrease, are there given as follows: at San Blas, Mex., in 1856; at Cape San Lucas, Lower California, in 1873; at Magdalena Bay in 1875; and on our own coast at San Diego (Cal.) in 1883, at Santa Barbara in 1880, while at Monterey the reversal is expected about 1899. The annual decrease of the declination as given in that article is as follows: —

Year.	San Blas.	San Lucas.	Magdalena Bay.	San Diego.	Santa Barbara.	Monterey.
1885	+ 2'.9	+ 1'.2	+ 1'.0	+ 0'.1	+ 0'.4	- 0'.9
1890	+ 3'.3	+ 1'.6	+ 1'.4	+ 0'.4	+ 0'.7	- 0'.6

The fixation of these dates became possible through the discovery by Assistant G. Davidson of the records of magnetic declinations made A.D. 1714 off the coast of Mexico, and transmitted by him to the Coast and Geodetic Survey Office, where they were discussed by Assistant C. A. Schott.

While the results published in February last supersede those given in the annual report for 1886 (Appendix No. 12, pp. 290-407), no improvement can be made in the expression for the secular variation of the declination at San Francisco, for which place the calculated reversal from increasing easterly to decreasing easterly declination is predicted for 1893. At that time the declination will not sensibly differ from 16°36' east, — its then extreme value. Owing to discord among the individual observations, these predicted years are subject to an uncertainty of several years; as shown, for instance, in the case of Monterey, for which the calculation appears to assign too late a date. The accurate observations